**Developed from Maine's Learning Results** 

#### **MATHEMATICS**

Cl. 4. 1 N 1 C 1 C	WATHEWATICS			
Cluster 1. Numbers and Operation				
Content Standard A: Number and Number Sense: Students will understand and demonstrate a sense				
of what numbers mean and how	they are used. Students will be ab	le to:		
Grade 3	Grade 4 Grade 5			
M1A1.3 <b>Read, write, model,</b> and compare whole numbers using <, >, and = and order numbers up to <b>9999</b> and classify numbers as odd <b>or</b> even for numbers up to <b>9999</b> .	M1A1.4 Read, compare, order, classify, and explain whole numbers up to one million.	M1A1.5 Read, compare, order, use, and represent simple fractions (halves, fourths, fifths, and tenths with all numerators) and decimals to hundredths.		
M1A2.3 Read, write, model and compare simple fractions with denominators 2,3 and 4	M1A2.4 Read, compare, order, classify, and explain simple fractions through tenths.			
M1A3.3 Demonstrate understanding of the meaning of decimals through hundredths (in money contexts only).	M1A3.4 Demonstrate knowledge of the meaning of decimals and integers and an understanding of how they may be used.	M1A3.5 Use divisibility rules for 2, 5 and 10.		
Content Standard R. Compute	stion: Students will understand and	d domonstrate computation skills (no		
_		demonstrate computation skills (no		
	ntation and numbers used in this sec	ction should match those listed for		
Standard A). Students will be at				
Grade 3	Grade 4	Grade 5		
M1B1.3 Solve single and multi-step, real-life problems using addition and subtraction with whole numbers with no number greater than <b>9999</b> .	M1B1.4 Solve multi-step, real-life problems using the four operations with whole numbers.	M1B1.5 Compute and model all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths and do straight computation with these numbers and operations.		
	M1B2.4 Solve real-life problems involving addition and subtraction of simple fractions.	M1B2.5 Create, solve, and justify the solution for multi-step, real-life problems involving all four operations on whole numbers (1-digit divisor, 3-digit dividend) and addition and subtraction with simple fractions with common denominators and decimals to hundredths.		
M1B4.3 Develop proficiency with the facts and algorithms of addition and subtraction on whole numbers using mental math and a variety of materials, strategies, and technologies with no number greater than 9999.	M1B4.4 Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.			
Content Standard I: Discrete I mathematics. Students will be at		and and apply concepts in discrete		
Grade 3	Grade 4	Grade 5		
M111.3 Create and use organized lists and Venn diagrams.	M1I1.4 Create and use organized lists, tree diagrams, Venn diagrams and networks.	Stade 5		

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#### **MATHEMATICS**

Cluster 1. Numbers and Operati	on				
Content Standard A: Number and Number Sense: Students will understand and demonstrate a					
sense of what numbers mean and ho	w they are used. Students will be	able to:			
Grade 6 Grade 7 Grade 8					
M1A1.6 Read, compare, order, use and represent fractions, (halves, thirds, with all numerators); and compare, order, use and represent decimals to thousandths and convert between decimals and percentages.  M1A1.7 Read, compare, order, use, and represent fractions, decimals, and percents and convert among different numeral forms (limited to terminating decimals for decimal to fraction conversion) and apply concepts of integers, absolute value and positive exponents.  M1A1.8 Use numbers in a variety equivalent and interchangeable for (e.g., integer, fraction, decimal, percent, exponential, and scientify notation) in problem-solving.					
M1A3.6 Recognize and apply concepts of prime and composite numbers and use divisibility rules for 2, 3, 4, 5, 6, 9 and 10; and recognize and find factors and multiples of natural numbers.	M1A3.7 Apply concepts of ratios in practical or other mathematical situations.	M1A3.8 Apply concepts of ratios, proportions, percents, and number theory (e.g. primes, factors, and multiples) in practical and other mathematical situations.			
(no calculator use for straight comp for Standard A). Students will be al	ole to:				
Grade 6	Grade 7	Grade 8			
M1B1.6 Compute and model all four operations with whole numbers, common fractions and decimals to thousandths, and do straight computation with these numbers and operations. Division limited to 2-digit whole number divisors and 3-digit dividends.	M1B1.7 Compute and model all four operations with whole numbers, fractions (including mixed numerals), decimals, and percents applying order of operations and do straight computation with these numbers and operations.	M1B1.8 Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.  Note: Includes positive and negative numbers.			
M1B2.6 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, common fractions and decimals to thousandths, with division limited to 2-digit whole number divisors and 3-digit dividends.	M1B2.7 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, fractions (including mixed numerals), decimals, and percents.	M1B2.8 Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.			

**Content Standard I. Discrete Mathematics:** There is considerable overlap with other areas and other aspects are more appropriately assessed locally. No Grade Level Expectations in 5-8.

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#### **MATHEMATICS**

Cluster 2. Shape and Size					
<b>Content Standard E: Geomet</b>	Content Standard E: Geometry: Students will understand and apply concepts from geometry.				
Grade 3	Grade 4	Grade 5			
M2E1.3 Use properties/ attributes (limited to number of sides, number of angles) to identify, describe, and distinguish between triangles and rectangles and lengths of sides to identify squares as special rectangles.	M2E1.4 Describe, model, and classify shapes and figures using applicable properties.	M2E1.5 Use properties/ attributes (limited to number of sides, number of angles, and length of sides, and lines of symmetry) to classify polygons and draw 2-dimensional shapes.			
M2E2.3 Identify a line of symmetry for a given shape or answer questions about figures based on lines of symmetry, e.g. "which of the following shapes have one or more lines of symmetry?"	M2E2.4 Experiment with shapes and figures to make generalizations regarding congruency, symmetry, and similarity.				
, ,	M2E3.4 Use transformations such as slides, flips, and rotations.	M2E3.5 Plot non-negative values as points on a number line.			
Students will be able to:  Grade 3	Grade 4	d and demonstrate measurement skills.  Grade 5			
M2F1.3 Solve and justify solutions to real-life problems involving the measurement of time, length, and temperature including using a ruler to measure length to the nearest inch and whole centimeter.  *Ruler on grade 3,4 &5 tests	M2F1.4 Solve and justify solutions to real-life problems involving the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, and volume.	What was here is combined below.			
M2F2.3 Select appropriate tools and units to measure length, time, and temperature	M2F2.4- Select measuring tools and units of measurement that are appropriate for what is being measured.	M2F2.5 Solve problems involving direct measures of length, distance, elapsed time, temperature, capacity, mass and weight with measures limited to whole numbers (quarters for lengths) including using a ruler to measure length to the nearest quarter inch and whole centimeter.			
		M2F3.5 Find area and perimeter of rectangles with whole numbers (includes formula use) with correct units.			
		Formula sheets as appropriate in all grades.			

<sup>4</sup> **GLE Code indexed to Maine's** *Learning Results*: The first character = content area; second character = cluster number; third character = content standard letter; fourth character = performance indicator; fifth character (after decimal point) = grade level. This document includes additional (**in bold**) Grade Level Expectations developed for MEA testing beginning in 2006-2007. Editorial Revision - 6/4/07 Maine Department of Education, September 2005

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#### **MATHEMATICS**

	MATHEMATICS			
Cluster 2. Shape and Size				
Content Standard E: Geometry: Students will understand and apply concepts from geometry.				
Grade 6	Grade 7	Grade 8		
M2E1.6 Use properties/ attributes (limited to number of sides, number of angles, and length of sides, lines of symmetry, parallel sides, perpendicular sides, and angles relative to 90°) to classify polygons; and to compare and classify rectangular prisms, including cubes; and triangular prisms and draw 2-dimensional shapes.	M2E1.7 Use properties/ attributes limited to number of vertices, number of edges, number of faces, shapes of faces, and types of angles to identify and distinguish among 3 dimensional figures and draw two-dimensional shapes and three-dimensional figures.	M2E1.8 Compare, classify, and draw two-dimensional shapes and three-dimensional figures.		
		M2E2.8 Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.		
M2E3.6 Use ordered pairs as coordinates of points in the first quadrant of a coordinate plane.	M2E3.7 Use a coordinate system to define and locate position.	M2E3.8 Use a coordinate system to define and locate position.		
Content Standard F: Measur skills. Students will be able to:	ement: Students will understand	and demonstrate measurement		
Grade 6	Grade 7	Grade 8		
M2F1.6 Perform conversions between inches, feet and yards; seconds, minutes and hours; pounds and ounces; and cups, pints, quarts and gallons.	M2F1.7 Perform conversions between pairs within the following groups: inches, feet, yards, and miles; millimeters, centimeters, meters, and kilometers; cups, pints, quarts, and gallons; milliliters and liters; ounces, pounds and tons; grams and kilograms; seconds, minutes, hours, days, weeks, months, and years.	M2F1.8 Demonstrate the structure and use of systems of measurements.		
M2F2.6 Solve problems involving direct measures of length, distance, elapsed time, temperature, capacity, mass and weight	M2F2.7 Solve problems involving unit price, speed and direct measures.	M2F2.8 Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate).		
weight.  M2F3.6 Compute the area and perimeter of triangles and rectangles with whole numbers (formula use), and find the volume of rectangular solids using pictures of blocks or gridded diagram with correct units.	M2F3.7 Given formulas from which to choose, find areas and perimeters of 2-D shapes (includes circles), and volumes of rectangular solids with rational numbers with correct units.	M2F3.8 Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.		

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#### **MATHEMATICS**

Cluster 3. Mathematical Decision Making					
Content Standard C: Data Analysis and Statistics: Students will understand and apply					
concepts of data analysis. Students will be able to:					
Grade 3 Grade 4 Grade 5					
		M3C1.5 Organize data to find mode, median and range of a set of values.			
M3C2.3 Read and interpret displays of data: line plots, tables, tally charts, and bar graphs, identifying least frequent, most frequent (mode*), reading, using and comparing values.  *not responsible for this vocabulary	M3C2.4 Read and interpret displays of data.				
Content Standard D: Probab probability. Students will be ab In the following GLEs it is expected to		nd apply concepts of			
Grade 3	Grade 4	Grade 5			
M3D2.3 Recognize and describe the likelihood of the occurrence of an event or events using "always", "impossible", "likely", "not likely" or "equally likely."	M3D2.4 Estimate probability from a sample of observed outcomes and simulations.	M3D1.5 Find the probabilities of simple events and represent them as fractions (1/2, 1/3, 2/3, 1/4, 2/4, 3/4 eligible).			
Reasoning Indicators independe	atical Reasoning: Due to the differently of other content and the reasonators from Standard J are included.	soning that is implied in other			

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#### **MATHEMATICS**

Cluster 3. Mathematical Decis	sion Making				
	nalysis and Statistics: Students v	vill understand and apply			
concepts of data analysis. Stude	ents will be able to:				
Grade 6 Grade 7 Grade 8					
M3C1.6 Organize data to find modes, medians, means and ranges for sets of data and displays: Data displays include frequency distributions, tables, line plots, or bar graphs (e.g., given a bar graph, determine the mode, median, range and mean).  M3C1.7 Organize data and analyze patterns and trends in data using modes, medians, means and ranges for sets of data (emphasis on comparing sets begins). Data displays include lists, tables, frequency distributions, line plots, bar graphs or stem and leaf plots.		M3C1.8 Organize and analyze data using mean, median, mode, and range.			
Content Standard D: Probabi Students will be able to: In the following GLEs it is expected the Grade 6	ality: Students will understand an nat students use area and set models.  Grade 7	d apply concepts of probability  Grade 8			
M3D1.6 Find the probabilities of	M3D1.7 Find the probability of	M3D1.8 Find the probability of			
simple events and represent them as fractions (simplest form not needed).	simple events and express the probability as a fraction or a percentage (percentages limited to multiples of 10% and 25%).	simple events and make predictions by applying the theories of probability.			
M3D4.6 Find the number of arrangements of 3 factors with no more than 4 choices per factor (e.g., tree diagram, organized list,	M3D4.7 Apply the idea of permutation in a problem situation with 6 elements or fewer (e.g., how many ways can the four letters in the	M3D4.8 Find all possible combinations and arrangements involving a limited number of variables.			

Content Standard J. Mathematical Reasoning: Content Standard J. Mathematical Reasoning: Due to the difficulty of measuring the Reasoning Indicators independently of other content and the reasoning that is implied in other performance indicators, no indicators from Standard J are included.

word "math" be arranged?).

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#### **MATHEMATICS**

Cluster 4. Patterns					
Content Standard G: Patterns, Relations, and Functions: Students will understand that					
mathematics is the science of patterns, relationships, and functions. Students will be able to:					
Grade 3	Grade 4	Grade 5			
M4G1.3 Determine the next term or missing terms in patterns with numbers or shapes.	M4G1.4. Use the patterns of numbers, geometry, and a variety of graphs to solve a problem.	M4G1.5 Translate real-life situations into addition, subtraction, multiplication, or division sentences.			
M4G2.3 Translate real-life	M4G2.4 Use variables and open				
situations into addition and	sentences to express relationships.				
subtraction sentences.	r				
		M4G3.5 Solve problems involving linear patterns in tables, graphs, words or rules using whole numbers.			
Content Standard H: Algebra concepts. Students will be able	ra Concepts: Students will unde e to:	erstand and apply algebraic			
Grade 3	Grade 4	Grade 5			
	M4H1.4 Develop and evaluate simple formulas in problem-solving contexts.	M4H1.6 Evaluate formulas with no more than 2 variables using whole numbers.			
M4H2.3 Solve for a missing number or find the replacement for a symbol in addition and subtraction sentences using whole numbers.	M4H2.4 Find replacements for variables that make simple number sentences true.				
		M4H6.5 Solve one-step equations using addition, subtraction, or multiplication with a variable. Values for variables are limited to whole numbers.			
		1			
	unication: Students will reflect u				
Grade 3	Grade 4	Grade 5			
M4K1.3 Complete tables, bar	M4K1.4 Use simple tables and	M4K2.5 Read and use statistics,			
graphs and pictographs.	graphs to communicate ideas and information in a concise and clear manner.	tables, and graphs to communicate ideas and information. Data displays include frequency distributions, tables, line plots, histograms or bar graphs and pie charts/circle graphs (read only).			

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#### **MATHEMATICS**

MATHEMATICS			
s, Relations, and Functions: Stutterns, relationships, and function			
Grade 7 Grade 8			
M4G1.7 Translate real-life linear situations into equations (limited to one step).	M4G1.8 Describe and represent relationships with tables, graphs, and equations.		
M4G3.7 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including	M4G3.8 Use patterns and multiple representations to solve problems.		
signed values).			
Concepts: Students will unders	tand and apply algebraic concepts.		
Grade 7	Grade 8		
M4H1.7 Evaluate formulas with no more than 3 variables using the computation specified in M1B1.7.	M4H1.8 Use concepts of variables and expressions.		
	M4H3.8 Analyze tables and graphs to identify properties and relationships in a practical context.		
M4H4.7 Graph inequality statements on a number line.	M4H4.8 Use graphs to represent two- variable equations.		
M4H6.7 Solve two-step equations using integers and positive rational numbers.	M4H6.8 Find solutions for unknown quantities in linear equations and in simple equations and inequalities.		
nication: Students will reflect upoships. Students will be able to:	on and clarify their understanding of		
Grade 7	Grade 8		
M4K2.7 Read and use statistics,	M4K2.8 Use statistics, tables, and		
tables, and graphs to communicate	graphs to communicate ideas and		
ideas and information. Data	information in convincing		
displays include lists, tables,	presentations and analyze		
frequency distributions, line plots,	presentations of others for		
bar graphs, stem and leaf plots or 1 <sup>st</sup> quadrant scatterplots and line graphs and pie charts/circle graphs (read only).	bias or deceptive presentation.		
	s, Relations, and Functions: Stutterns, relationships, and function  Grade 7  M4G1.7 Translate real-life linear situations into equations (limited to one step).  M4G3.7 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including signed values).  Concepts: Students will unders  Grade 7  M4H1.7 Evaluate formulas with no more than 3 variables using the computation specified in M1B1.7.  M4H4.7 Graph inequality statements on a number line.  M4H6.7 Solve two-step equations using integers and positive rational numbers.  mication: Students will reflect upoships. Students will be able to:  Grade 7  M4K2.7 Read and use statistics, tables, and graphs to communicate ideas and information. Data displays include lists, tables, frequency distributions, line plots, bar graphs, stem and leaf plots or 1st quadrant scatterplots and line		

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# MATHEMATICS Grade 3

Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
	_		
and Operations	Size		
Cluster 1 – Numbers and Operations  A. Numbers and Number Sense M1A1.3 Read, write, model, compare whole numbers using <, >, and = and order numbers up to 9999 and classify numbers as odd or even for numbers up to 9999.  M1A2.3 Read, write, model and compare simple fractions with denominators 2,3 and 4  M1A3.3 Demonstrate understanding of the meaning of decimals through hundredths (in money contexts only).  B. Computation M1B1.3 Solve single and multi-step, real-life problems using addition and subtraction with whole numbers with no number greater than 9999.  M1B4.3 Develop proficiency with the facts and algorithms of addition	Cluster 2 – Shape and Size  E. Geometry M2E1.3 Use properties/ attributes (limited to number of sides, number of angles) to identify, describe, and distinguish between triangles and rectangles and lengths of sides to identify squares as special rectangles.  M2E2.3 Identify a line of symmetry for a given shape or answer questions about figures based on lines of symmetry, e.g. "which of the following shapes have one or more lines of symmetry?"  F. Measurement M2F1.3 Solve and justify solutions to real-life problems involving the measurement of time, length, and temperature including using a ruler to measure length to the nearest inch and whole centimeter.  M2F2.3 Select appropriate	Cluster 3 – Mathematical Decision Making C. Data Analysis and Statistics M3C2.3 Read and interpret displays of data: line plots, tables, tally charts, and bar graphs, identifying least frequent, most frequent (mode*), reading, using and comparing values. *not responsible for this vocabulary  D. Probability M3D2.3 Recognize and describe the likelihood of the occurrence of an event using "always", "impossible", "likely", "not likely" or "equally likely."	G. Patterns, Relations, and Functions M4G1.3 Determine the next term or missing terms in patterns with numbers or shapes. M4G2.3 Translate real-life situations into addition and subtraction sentences.  H. Algebra Concepts M4H2.3 Solve for a missing number or find the replacement for a symbol in addition and subtraction sentences using whole numbers.  K. Communication M4K1.3 Complete tables, bar graphs and pictographs.
proficiency with the facts and algorithms of addition and subtraction on whole numbers using mental math and a variety of materials, strategies, and technologies with no number greater than <b>9999.</b>	M2F2.3 Select appropriate tools and units to measure length, time, and temperature  *Ruler on grade 3,4 &5 tests		
I. Discrete Mathematics M1I1.3 Create and use organized lists and Venn diagrams.			

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## MATHEMATICS Grade 4

Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
and Operations	Size	Mathematical	
_		Decision Making	
A. Numbers and	E. Geometry	C. Data Analysis and	G. Patterns, Relations,
Number Sense	M2E1.4 Describe, model,	Statistics	and Functions
M1A1.4 Read, compare,	and classify shapes and	M3C2.4 Read and interpret	M4G1.4. Use the patterns of
order, classify, and explain	figures using applicable	displays of data.	numbers, geometry, and a
whole numbers up to one	properties.		variety of graphs to solve a
million.		D. Probability	problem.
		M3D2.4 Estimate	
		probability from a sample of	
-		simulations.	relationships.
tenths.			<b>T</b>
M1A2 4 Domongtucto	sililiarity.		
	M2F3 4 Use		
			problem-solving contexts.
	F		M4H2 4 Find replacements
lion energinally we assert	F. Measurement		
B. Computation			
	solutions to real-life		true.
	problems involving the		
four operations with whole	measurement of time,		K. Communication
numbers.			
	capacity, and volume.		communicate ideas and
			information in a concise
			and clear manner.
fractions.			
MIDAAD			
1 -	being measured.		
•			
stategies, and technologies.			
I. Discrete Mathematics			
M111.4 Create and use			
diagrams, Venn diagrams			
and networks.			
M1A2.4 Read, compare, order, classify, and explain simple fractions through tenths.  M1A3.4 Demonstrate knowledge of the meaning of decimals and integers and an understanding of how they may be used.  B. Computation M1B1.4 Solve multi-step, real-life problems using the four operations with whole numbers.  M1B2.4 Solve real-life problems involving addition and subtraction of simple fractions.  M1B4.4 Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.  I. Discrete Mathematics M111.4 Create and use organized lists, tree diagrams, Venn diagrams	M2F1.4 Solve and justify solutions to real-life problems involving the	M3D2.4 Estimate	M4G2.4 Use variables an open sentences to express relationships.  H. Algebra Concepts M4H1.4 Develop and evaluate simple formulas problem-solving contexts  M4H2.4 Find replacement for variables that make simple number sentences true.  K. Communication M4K1.4 Use simple table and graphs to communicate ideas and information in a concise.

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# MATHEMATICS Grade 5

Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
and Operations	Size	Mathematical	
		Decision Making	
A. Numbers and	E. Geometry	C. Data Analysis and	G. Patterns, Relations,
Number Sense	M2E1.5 Use properties/	Statistics	and Functions
M1A1.5 Read, compare,	attributes (limited to	M3C1.5 Organize data to	M4G1.5 Translate real-life
order, use, and represent	number of sides, number of	find mode, median and	situations into addition,
simple fractions (halves,	angles, and length of sides,	range of a set of values.	subtraction, multiplication,
fourths, fifths, and tenths	and lines of symmetry) to		or division sentences.
with all numerators) and	classify polygons and draw	D. Probability	N462 5 6 1 11
decimals to hundredths.	2-dimensional shapes.	M3D1.5 Find the	M4G3.5 Solve problems
M1A25 Has divisibility	M2E2 5 Plot non negotive	probabilities of simple	involving linear patterns in tables, graphs, words or
M1A3.5 Use divisibility rules for 2, 5 and 10.	M2E3.5. Plot non-negative values as points on a	events and represent them	rules using whole numbers.
Tules for 2, 3 and 10.	number line.	as fractions (1/2, 1/3, 2/3, 1/4, 2/4, 3/4 eligible).	rules using whole numbers.
B. Computation	number fine.	1/4, 2/4, 5/4 eligible).	H. Algebra Concepts
M1B1.5 Compute and	F. Measurement		M4H1.6 Evaluate
model all four operations on	M2F2.5 Solve problems		formulas with no more
whole numbers (1-digit	involving direct measures		than 2 variables using
divisor, 3-digit dividend)	of length, distance,		whole numbers.
and addition and subtraction	elapsed time, temperature,		
with simple fractions with	capacity, mass and weight		M4H6.5 Solve one-step
common denominators and	with measures limited to		equations using addition,
decimals to hundredths and	whole numbers (quarters		subtraction, or
do straight computation	for lengths) including		multiplication with a
with these numbers and	using a ruler to measure		variable. Values for
operations.	length to the nearest		variables are limited to
M1D2.5 Courts and a soul	quarter inch and whole		whole numbers.
M1B2.5 Create, solve, and	centimeter.		
justify the solution for multi-step, real-life	M2F3.5 Find area and		K. Communication
problems involving all four	perimeter of rectangles with		M4K2.5 Read and use
operations on whole	whole numbers (includes		statistics, tables, and
numbers (1-digit divisor, 3-	formula use) with correct		graphs to communicate
digit dividend) and addition	units.		ideas and information. Data displays include
and subtraction with simple			frequency distributions,
fractions with common	Formula sheets as		tables, line plots,
denominators and decimals	appropriate in all grades.		histograms or bar graphs
to hundredths.			and pie charts/circle
			graphs (read only).
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# MATHEMATICS Grade 6

_	Ora	ae o	
Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
and Operations	Size	Mathematical	
-		Decision Making	
A. Numbers and	E. Geometry	C. Data Analysis and	G. Patterns, Relations,
Number Sense	M2E1.6 Use properties/	Statistics	and Functions
M1A1.6 Read, compare,	attributes (limited to	M3C1.6 Organize data to	M4G1.6 Translate real-life
order, use and represent	number of sides, number of	find modes, medians, means	situations into addition,
fractions, (halves, thirds,	angles, and length of sides,	and ranges for sets of data	subtraction, multiplication,
fourths, fifths, sixths,	lines of symmetry, parallel	and displays: Data displays	and division sentences with
eighths and tenths with all	sides, perpendicular sides,	include frequency	whole numbers (mix of
numerators); and compare,	and angles relative to 90°)	distributions, tables, line	operations included).
order, use and represent	to classify polygons; and to	plots, or bar graphs (e.g.,	,
decimals to thousandths and	compare and classify	given a bar graph,	M4G3.6 Solve problems
convert between decimals	rectangular prisms,	determine the mode,	involving linear patterns in
and percentages.	including cubes; and	median, range and mean).	the form of tables, graphs,
	triangular prisms and draw	, ,	words, rules and equations
M1A3.6 Recognize and	2-dimensional shapes.	D. Probability	using whole numbers,
apply concepts of prime and		M3D1.6 Find the	decimals to hundredths and
composite numbers and use	M2E3.6 Use ordered pairs	probabilities of simple	simple fractions.
divisibility rules for 2, 3, 4,	as coordinates of points in	events and represent them	
5, 6, 9 and 10; and	the first quadrant of a	as fractions (simplest form	H. Algebra Concepts
recognize and find factors	coordinate plane.	not needed).	M4H1.6 Evaluate
and multiples of natural			formulas with no more
numbers.	F. Measurement	M3D4.6 Find the number of	than 3 variables using the
	M2F1.6 Perform	arrangements of 3 factors	computation specified in
B. Computation	conversions between	with no more than 4 choices	M1B1.6.
M1B1.6 Compute and	inches, feet and yards;	per factor (e.g., tree	
model all four operations	seconds, minutes and	diagram, organized list,	M4H6.6 Solve one-step
with whole numbers,	hours; pounds and	pictures).	equations using whole
common fractions and	ounces; and cups, pints,		numbers with all four
decimals to thousandths,	quarts and gallons.		operations.
and do straight computation	3.5000 C G 1		
with these numbers and	M2F2.6 Solve problems		K. Communication
operations. Division limited to 2-digit whole number	involving direct measures		M4K2.6 Read and use
divisors and 3-digit	of length, distance,		statistics, tables, and
dividends.	elapsed time, temperature,		graphs to communicate
dividends.	capacity, mass and weight.		ideas and information.
M1B2.6 Create, solve, and	M2F3.6 Compute the area		Data displays include
justify the solution for	and perimeter of triangles		frequency distributions, tables, line plots,
multi-step, real-life	and rectangles with whole		histograms or bar graphs
problems with whole	numbers (formula use), and		and pie charts/circle
numbers, common fractions	find the volume of		graphs (read only).
and decimals to	rectangular solids using		Stapins (teau only).
thousandths, with division	pictures of blocks or		
limited to 2-digit whole	gridded diagram with		
number divisors and 3-digit	correct units.		
dividends.			

Developed from Maine's Learning Results

# MATHEMATICS Grade 7

Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
and Operations	Size	Mathematical	
		Decision Making	
A. Numbers and Number Sense M1A1.7 Read, compare, order, use, and represent fractions, decimals, and percents and convert among different numeral forms (limited to terminating decimals for decimal to fraction conversion) and apply concepts of integers, absolute value and positive exponents.  M1A3.7 Apply concepts of ratios in practical or other mathematical situations.  B. Computation M1B1.7 Compute and	E. Geometry M2E1.7 Use properties/ attributes limited to number of vertices, number of edges, number of faces, shapes of faces, and types of angles to identify and distinguish among 3 dimensional shapes and draw two-dimensional shapes and three-dimensional figures  M2E3.7 Use a coordinate system to define and locate position.  F. Measurement M2F1.7 Perform conversions between pairs		G. Patterns, Relations, and Functions M4G1.7 Translate real-life linear situations into equations (limited to one step).  M4G3.7 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including signed values).  H. Algebra Concepts M4H1.7 Evaluate formulas with no more than 3 variables using the computation specified in M1B1.7.
model all four operations with whole numbers, fractions (including mixed numerals), decimals, and percents applying order of operations and do straight	within the following groups: inches, feet, yards, and miles; millimeters, centimeters, meters, and kilometers; cups, pints, quarts, and gallons;	multiples of 10% and 25%).  M3D4.7 Apply the idea of permutation in a problem situation with 6 elements or fewer (e.g., how many ways	M4H4.7 Graph inequality statements on a number line.  M4H6.7 Solve two-step
computation with these numbers and operations.	milliliters and liters; ounces, pounds and tons; grams and kilograms; seconds,	can the four letters in the word "math" be arranged?).	equations using integers and positive rational numbers.
M1B2.7 Create, solve, and justify the solution for multi-step, real-life problems with whole numbers, fractions (including mixed numerals), decimals, and percents.	minutes, hours, days, weeks, months, and years.  M2F2.7 Solve problems involving unit price, speed and direct measures.  M2F3.7 Given formulas from which to choose, find areas and perimeters of 2-D shapes (includes circles), and volumes of rectangular solids with rational numbers with correct units.		K. Communication M4K2.7 Read and use statistics, tables, and graphs to communicate ideas and information. Data displays include lists, tables, frequency distributions, line plots, bar graphs, stem and leaf plots or 1 <sup>st</sup> quadrant scatterplots and line graphs and pie charts/circle graphs (read only).

Developed from Maine's Learning Results

## MATHEMATICS Grade 8

Cluster 1 – Numbers	Cluster 2 – Shape and	Cluster 3 –	Cluster 4 - Patterns
and Operations	Size	Mathematical	
		Decision Making	
A. Numbers and	E. Geometry	C. Data Analysis and	G. Patterns, Relations,
Number Sense	M2E1.8 Compare, classify,	Statistics	and Functions
M1A1.8 Use numbers in a	and draw two-dimensional	M3C1.8 Organize and	M4G1.8 Describe and
variety of equivalent and	shapes and three-	analyze data using mean,	represent relationships with
interchangeable forms (e.g.,	dimensional figures.	median, mode, and range.	tables, graphs, and
integer, fraction, decimal,	N/2F2 0 A 1		equations.
percent, exponential, and	M2E2.8 Apply geometric	D. Probability	
scientific notation) in	properties to represent and	M3D1.8 Find the	M4G3.8 Use patterns and
problem-solving.	solve real-life problems involving regular and	probability of simple events	multiple representations to
M1 A 2 9 Apply concents of	irregular shapes.	and make predictions by	solve problems.
M1A3.8 Apply concepts of ratios, proportions,	irregular shapes.	applying the theories of	H Algebra Concents
percents, and number	M2E3.8 Use a coordinate	probability.	H. Algebra Concepts M4H1.8 Use concepts of
theory (e.g. primes, factors,	system to define and locate	M3D4.8 Find all possible	variables and expressions.
and multiples) in practical	position.	combinations and	variables and expressions.
and other mathematical		arrangements involving a	M4H3.8 Analyze tables and
situations.	F. Measurement	limited number of variables.	graphs to identify properties
	M2F1.8 Demonstrate the		and relationships in a
B. Computation	structure and use of systems		practical context.
M1B1.8 Compute and	of measurements.		
model all four operations	1,4272.0.7		M4H4.8 Use graphs to
with whole numbers,	M2F2.8 Develop and use		represent two-variable
fractions, decimals, sets of	concepts that can be		equations.
numbers, and percents,	measured directly, or indirectly (e.g., the concept		M4H6.8 Find solutions for
applying the proper order of operations.	of rate).		unknown quantities in linear
operations.	or rate).		equations and in simple
Note: Includes positive and	M2F3.8 Demonstrate an		equations and inequalities.
negative numbers.	understanding of length,		equations and mequanties.
negative name ers.	area, volume, and the		K. Communication
M1B2.8 Create, solve, and	corresponding units, square		M4K2.8 Use statistics,
justify the solution for	units, and cubic units of		tables, and graphs to
multi-step, real-life	measure.		communicate ideas and
problems including those			information in convincing
with ratio and proportion.			presentations and analyze
			presentations of others for
			bias or deceptive
			presentation.